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The compound growth rate of area, production and productivity of cashew nut in Bastar district of Chhattisgarh state

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Abstract

An effort has been made in the study "An Economic Analysis of Production and Marketing of Cashew Nut in Bastar District of Chhattisgarh State" In the Bastar district, two blocks Jagdalpur and Bakawand have been chosen based on their cashew nut production and area potential. Six villages out of the specified blocks were chosen on purpose to meet the study's goals. A total of 60 farmers were included in the sample. Further the respondents were marginal, small, medium, and large cashew nut farmers. to examine the major objectives, specifically to analyse the compound growth rate of area, production, and productivity of cashew nut in Bastar district and Chhattisgarh state, to workout the cost and returns of cashew nut in the study area, to examine the marketing pattern of cashew nut in the study area, and to find out the constraints. The study's findings showed that the percentage of male and female in the Bastar district's total family composition was 54.76 and 45.23. Schedule Tribe (ST) families had the highest caste-wise representation in the selected homes (43.33%). Regardless of school level, 89.23% of people were considered to be literate. During kharif, paddy was the primary crop grown by sample farmers in the research region. During kharif (39.14%), farmers allocated more land. Nearly 135.23% was determined to be the average cropping intensity. Additionally, the farms classified as overall, marginal, small, medium, and large farmers had cropping intensities of 142.35, 129.56, 140.14, and 127.42%, respectively. In the Bastar district and the state of Chhattisgarh, the rise in cashew nut area, production, and productivity was significant and measured at 2.66, 9.92, 7.06 and 4.45, 8.61, 3.98 respectively.

Keywords: Compound growth rate, significant

Introduction

The cashew tree (*Anacardium occidentale*) belongs to the genus *Anacardium* and is a tropical evergreen tree that is indigenous to South America. It bears the cashew seed and the accessory fruit known as the cashew apple. The tree can reach a height of 14 meters (46 feet), although dwarf varieties, which can only reach 6 meters (20 feet), are more productive and yield more money. In 2018-19, the total production of Cashew as highest in Maharashtra (269.44 thousand tonnes) followed by Andhra Pradesh (116.92 thousand tonnes), Odisha (98.59 thousand tonnes), Karnataka (89.45 thousand tonnes) and Kerala (88.18 thousand tonnes). In India. (National Horticulture Board 2018-19). Cashew nut production plays an important role in Chhattisgarh state. In Chhattisgarh state, the total area and production of plantation crop are 31.895 thousand hectare and 1040.190 thousand metric tonnes, respectively. The major plantation crops grown in Chhattisgarh are cashew and coconut. Total production of Cashew nut in Chhattisgarh is 23.413 thousand metric tonnes in an area of 30.237 thousand hectares in the year 2021-22. It is cultivated in almost every district of the state. Among the districts of Chhattisgarh state, Bastar is the leading district in cashew nut production which produces 7.470 thousand metric tonnes in 9.339 thousand hectare area followed by Kondagaon (4.849 thousand metric tonnes), Raigarh (4.671 thousand metric tonnes), Kanker (2.122 thousand metric tonnes), Jashpur (1.453 thousand metric tonnes), Korea (1.449 thousand metric tonnes), Dantewada (0.637 thousand metric tonnes), Narayanpur (0.300 thousand metric tonnes), Mahasamund (0.180 thousand metric tonnes), Dhamtari (0.157 thousand metric tonnes) (Agri portal, Directorate of Horticulture, Statistics, 2021-22).

Materials and Methods

Collection of data

The study is based on both primary and secondary data. The primary data was collected from the selected respondents with the help of pre-tested interview schedule by the personal

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interview method and secondary data was collected from Chhattisgarh agriculture statistics, land record office, annual districts statistics and other published and unpublished reports.

Methodology

60 farmers were selected randomly from Bastar district farming area and market. A multistage simple random sampling technique (SRS) was adopted to select the block. Villages and the respondents. Market and different farmer involved in cashew nut production and marketing in Bastar farming area. The details of the sampling techniques at various stages are given as under.

Compound Growth Rate (CGR)

Compound Growth Rate (CGR) was calculated to examine the cashew nut study area's growth patterns in terms of area, production, and productivity. The formulae's specifics are as follows:

$$Y = aB^t$$

$$\text{Log } Y = \log a + t \log B$$

Where,

Y = Area (ha) / production (tonnes) / productivity (Kg/ha)

a = Constant

B = Regression coefficient

t = time in year

Compound growth rate (%) = (Antilog B-1)100

Results and Discussion

The compound growth rate of area, production and productivity of cashew nut in Bastar district and Chhattisgarh state

The time series cross sectional secondary data from 2010-11 to 2020-2021 was used to examine the growth in area, production and productivity of cashewnut of Bastar and Chhattisgarh State as a whole, sampled districts of study area of Chhattisgarh, which is shown in Table 1. The results showed that growth in production of cashewnut of the Chhattisgarh state was significant and found to be 8.61 percent growth in production which attributed with significant increase in area and productivity of cashew nut by percent was 4.45 and 3.98 percent was found in Chhattisgarh state.

The growth in production of cashew nut of the Bastar district was significant and found to be 9.92 percent growth in production which attributed with significant increase in area and productivity of cashew nut by percent was 2.66 and 7.06 percent was found in Bastar district.

Table 1: Compound growth rate of area, production and productivity of cashew nut in Bastar district and Chhattisgarh state

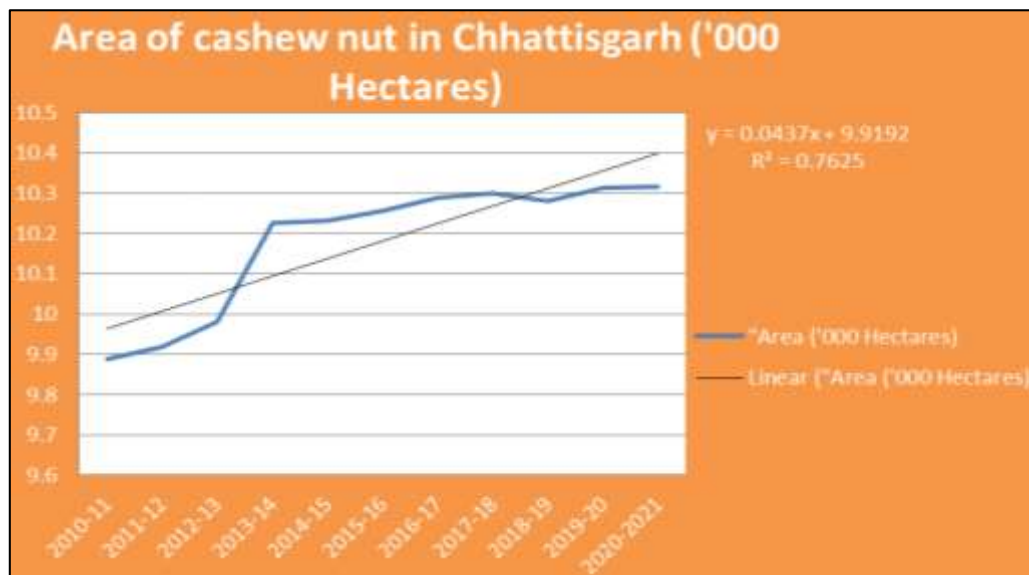
S.no.	Year	Area ('000 Hectares)		Production ('000 Tonnes)		Productivity (Kg/ha)	
		Chhattisgarh	Bastar	Chhattisgarh	Bastar	Chhattisgarh	Bastar
1	2010-2011	19.67	7.70	9.18	3.31	466.6	429.8
2	2011-2012	20.31	6.83	11.36	2.93	559.2	429.5
3	2012-2013	21.60	7.12	12.76	3.06	591.0	429.8
4	2013-2014	27.65	7.56	22.60	6.04	817.4	800.0
5	2014-2015	27.79	7.56	23.03	6.04	828.8	800.0
6	2015-2016	28.42	7.77	23.03	6.14	810.3	790.6
7	2016-2017	29.39	8.15	24.05	6.58	818.3	807.5
8	2017-2018	29.71	8.24	23.11	6.65	778.1	807.5
9	2018-2019	29.13	8.40	22.12	6.79	759.4	807.8
10	2019-2020	30.13	9.24	23.00	7.39	763.3	799.9
11	2020-2021	30.17	9.29	22.71	7.43	752.9	799.9
	CGR	4.45	2.66	8.61	9.92	3.98	7.06
	P-value	0.0004*	0.004***	0.004***	0.0005*	0.0238**	0.0048***

Sources: Directorate of Agriculture Chhattisgarh (2020-21)

Note: *** denote significant at 1% level of significance

** denote significant at 5% level of significance

* denote significant at 10% level of significance



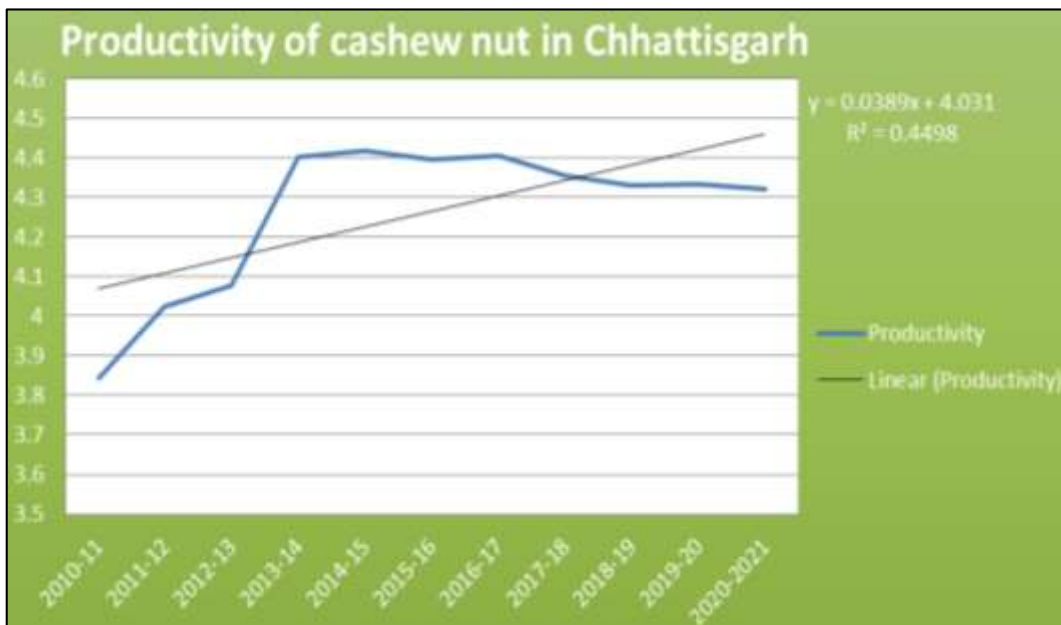
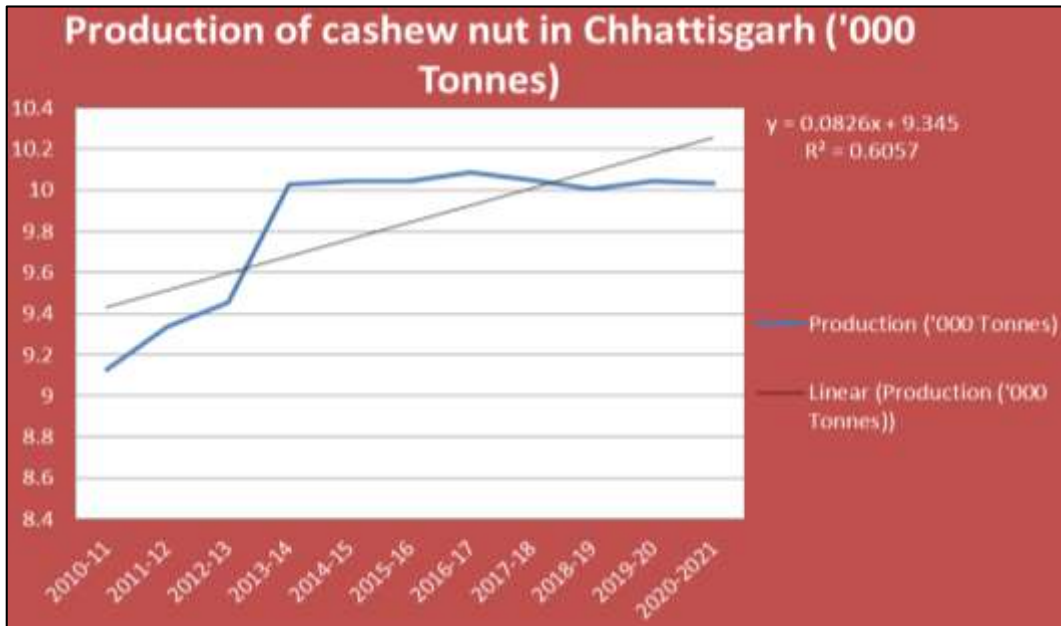


Fig 1: Trend in area, production and productivity of cashew nut in Chhattisgarh

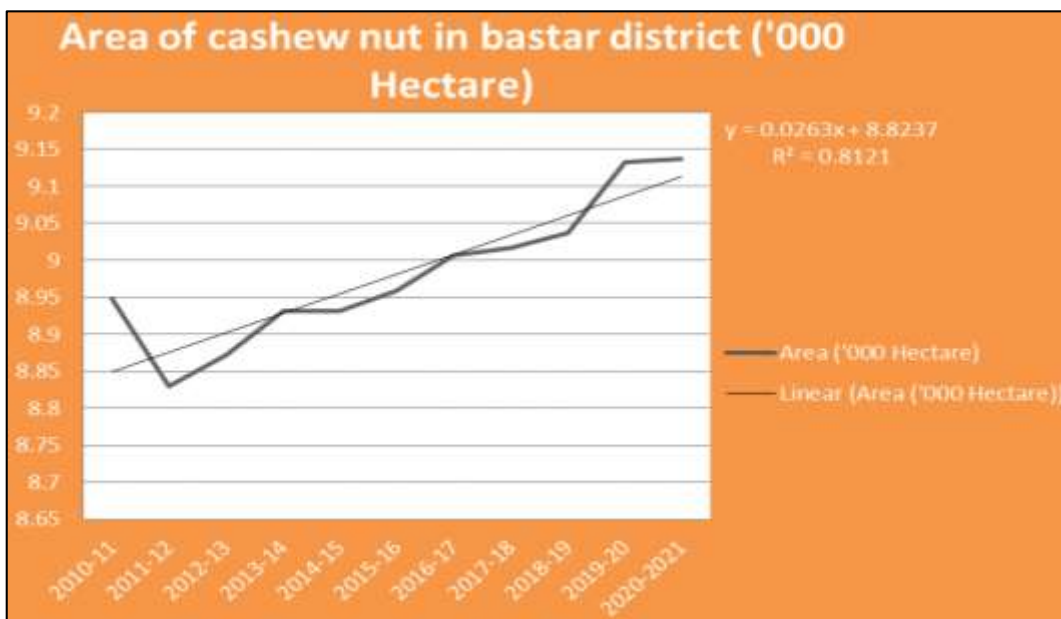




Fig 2: Trend in area, production and productivity of cashew nut in Bastar districts

Conclusion

Farmers should be informed about high-yielding cashew cultivars with KVK's scientific assistance. Through a rural agricultural extension officer, farmers should be informed about planting intercropping crops in cashew fields to generate additional revenue. More and more cooperative organizations should be established for the sale of cashew nuts. Establishing a cashew processing sector will help to increase cashew nut production and cultivation.

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